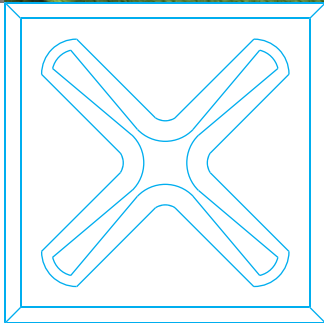




ALAM TIMUR INDUSTRIES SDN BHD
PRESSED STEEL SECTIONAL RECTANGULAR TANKS



Introduction

General

Established in the year 1990, Alam Timur Industries Sdn. Bhd. is synonymous in Malaysia, Middle East, Africa and South East Asia countries as a producer of quality pressed steel sectional water tanks. The tank is made up by a series of factory produced standard panels, cleats and angle stays well bolted together on site to form a storage container of required size and capacity. Because of its modular concept, a great range of sizes and capacities is possible. The tank capacity can go as low as 0.5 cubic metres or as high as 5,000 cubic metres. The popularity it gains is not only due to it being economical but also the many advantages it possesses not found in other kinds of storage tanks. The tank panels come in standard module of either 1.0m x 1.0m or 1.22m x 1.22m, each with a distinctive star emboss formed with a high capacity hydraulic press. Half and quarter panels are also available to meet any eventuality in the requirement.

Over the years, continuous effort in product improvements and innovations are relentlessly made to maintain customer satisfaction. Clients are also welcomed to seek our advice on matters such as tank and support design, tank upgrading, tank alteration, installation procedures etc.

Materials

- Mild Steel Panels: BS EN 10025-3:2004, S275JR or JIS G3101 SS400
- Stainless Steel Panels: AISI Grade 304 and 316

Panel Coating and Lining

- Bitumen or epoxy painted
- Hot dipped galvanized BS 729:1999 / ISO 1461:2009 standard
- High-density polyethylene (HDPE) internal lining of completed tank

Features / Advantages

- Infinite range of tank sizes and capacities
- Rugged and simple design
- Easy to upgrade the tank capacities
- Easy and quick to install
- No welding on site is required
- Ideal for installation at areas with restricted access
- Economical and convenient in transportation
- Minimum maintenance required
- Safe and durable
- No ultra-violet light penetration
- No fire hazard

Applications

Location	Type of tanks
Public amenities - Railway, bus stations and airports	Potable water tanks
Residential - Apartments and condominiums	Fire-fighting tanks
Commercial - Shopping centres, hotels and office complex	Air-condition tanks
Public buildings - Hospitals, clinics, schools and universities	Raw water tanks
Industrial - Factories and warehouses	Irrigation tanks
Public works - Township and villages	Effluent tanks
Government - Military base, sewage treatment and power generation	Feeder water tanks
Agriculture - Poultry farming and estate	Livestock water supply tanks
Construction - Buildings, roads and other infrastructure	Temporary water tanks



Tank Components

Tank Panels

• Panel size:

For 1220 x 1220 module: 1220 x 1220, 610 x 1220, 610 x 610

For 1000 x 1000 module: 1000 x 1000, 500 x 1000, 500 x 500

• Flanges of panels:

Each individual panel is hydraulically pressed with a combined double flange at an angle of 45° and 90° to the face of the panel on all 4 sides.



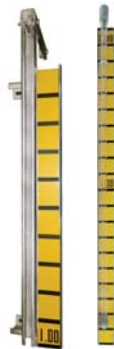
Roof Panels

- Pressed steel sectional panel cover.
- Pitched roof (upon request).
- Each compartment is provided with a hinged manhole and an air ventilator.



Level Indicators

- Mechanical of cat and mouse type.
- Direct reading acrylic glass tube type.



Bracing

- The water tank is reinforced by internal bracing consist of cleats, lugs and angle stays adequately designed accordance to tank's maximum working capacities.
- Specially designed externally reinforced tank can be provided upon request.



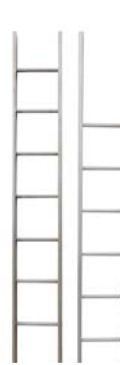
Sealant

For the jointing of panel flanges, we provide high density ultra-violet resistance PVC foam gaskets. Specially designed butyl rubber mastic compound provided for the cleats offers excellent water tight joints.

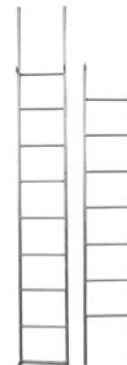


Ladders

- For internal and external ladders, choice of mild steel (hot dipped galvanized, bitumen painted), stainless steel or aluminium are available.
- External ladder with safety cage available upon request.



Aluminium



Hot dipped galvanized /
Stainless Steel



Cage

Inlet Valve Chambers and Bottom Sumps

Supply of inlet valve chambers and bottom sumps upon request.



Hole Openings and Pipe Flanges

- Holes for any type of nozzle such as BS, ANSI, JIS and others can be pre-opened at factory upon request.
- Sockets and flanges of any standards can be pre-welded at selected positions on any tank panel upon request.



Divisions

- Partition walls can be provided to enable the tank maintenance on individual tank compartment without interrupting water supply.
- Specially designed baffle wall which partially subdivide the tank enable longer flow path of water within the tank.

Bolts, Nuts & Washers

All bolts, nuts and washers used for tank panels and internal bracing are complied to the requirements of BS1564:1975.



Air Ventilators

Standard mushroom or goose neck air vents (65mm or 100mm diameter).



Odd Shaped Tanks

Specially designed tank in either shapes of O, U, L, Z and of varied compartment heights can be provided.

**see page 4*

Other Services

- Fabrication of steel stands and skid beams.
- Hand railing around tank roof.

Tank Panels - Panel Thickness

1220 x 1220

Material	Tank Height (mm)	Tank Panel Thickness (Nominal) (mm)		Roof Panel Thickness (mm)
		Base	Wall	
Mild Steel	1220	5.0	5.0 (Tier 1)	1.5 to 3.0
	2440	5.0	5.0 (Tier 1,2)	
	3660	5.0	5.0 (Tier 1,2,3)	
	4880	6.0	6.0 (Tier 1) 5.0 (Tier 2,3,4)	
Stainless Steel	1220	2.5	2.5 (Tier 1)	1.5 to 3.0
	2440	3.0	3.0 (Tier 1,2)	
	3660	4.0	4.0 (Tier 1) 3.0 (Tier 2,3)	
	4880	5.0	5.0 (Tier 1) 4.0 (Tier 2) 3.0 (Tier 3,4)	

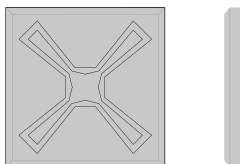
- Thickness in compliance with BS1564:1975
- Plates of varied thicknesses are also available for optimum design.

1000 x 1000

Material	Tank Height (mm)	Tank Panel Thickness (Nominal) (mm)		Roof Panel Thickness (mm)
		Base	Wall	
Mild Steel	1000	4.0	4.0 (Tier 1)	1.5 to 3.0
	2000	4.0	4.0 (Tier 1,2)	
	3000	4.0	4.0 (Tier 1,2,3)	
	4000	4.0	4.0 (Tier 1,2,3,4)	
	5000	5.0	5.0 (Tier 1,2) 4.0 (Tier 3,4,5)	
	6000	5.0	5.0 (Tier 1,2) 4.0 (Tier 3,4,5,6)	
Stainless Steel	1000	2.5	2.5 (Tier 1)	1.0 to 3.0
	2000	2.5	2.5 (Tier 1,2)	
	3000	2.5	2.5 (Tier 1,2,3)	
	4000	3.0	3.0 (Tier 1) 2.5 (Tier 2,3,4)	
	5000	4.0	4.0 (Tier 1) 3.0 (Tier 2,3,4,5)	
	6000	5.0	5.0 (Tier 1) 4.0 (Tier 2) 3.0 (Tier 3,4,5,6)	

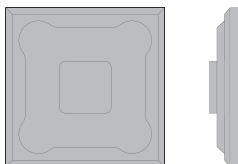
Types of Panel

Full Size Tank Panel (Base & Wall)



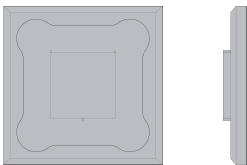
1220mm x 1220mm
1000mm x 1000mm

Full Size Roof Panel



1220mm x 1220mm
1000mm x 1000mm

Manhole Access



1220mm x 1220mm
1000mm x 1000mm

Full Size Nozzle Panel



1220mm x 1220mm
1000mm x 1000mm

Half Size Panel (Base, Wall, Roof)



610mm x 1220mm
500mm x 1000mm

Quarter Size Panel (Base, Wall, Roof)

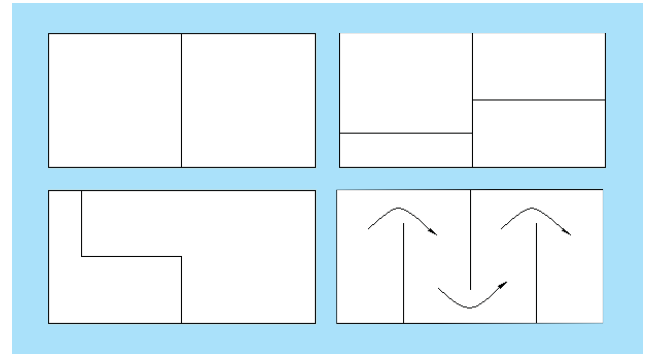


610mm x 610mm
500mm x 500mm

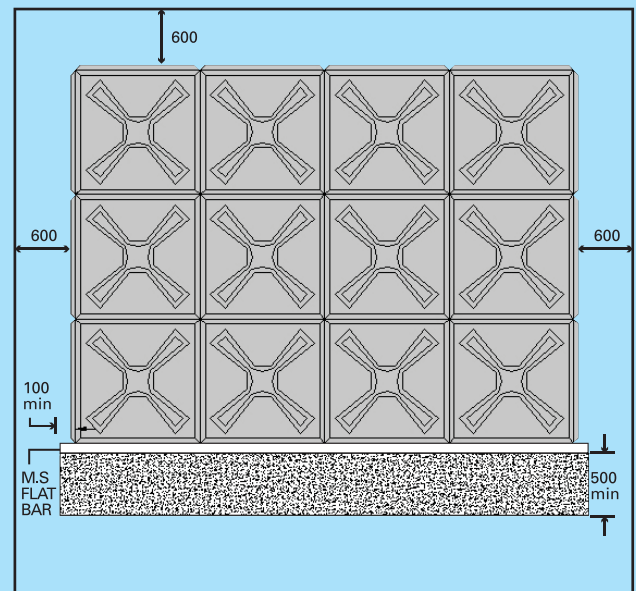
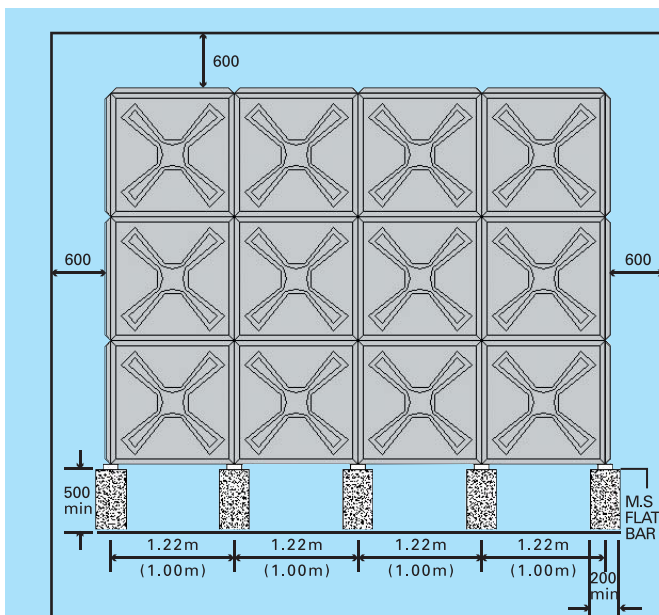
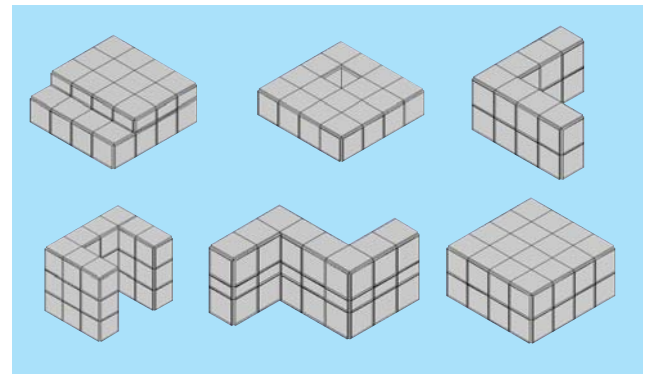
Tank Supports

- Concrete wall is most common and economical for tank support and to be built in one direction only beneath each seam of the tank.
- A minimum clearance of 600mm is required for side walls and above the roof for installation.
- Each end of wall must exceed the length or width of the tank by at least 100mm.
- Minimum height 500mm and minimum width 200mm for the walls.
- Walls are to be levelled to $\pm 5\text{mm}$ over the width of the panel to ensure the flanges are fully supported.
- For tank equal or above 3.66m height, a mild steel capping flat is recommended between the top of the wall and base of the tank to give added protection.
- C-Channel or I-Beam to be positioned on the top of the dwarf walls if any of them not built under the seam of the tank.
- Alternative method of support is by universal beams in lieu of the dwarf walls.

Tank Compartments



Tank Configurations



Quality Assurance



Approvals



Stainless Steel Tank with Deep Drawn Panels

Introduction

Stainless steel tank panels of any grade are generally more costly than those of mild steel or GRP. However, sectional tank made of stainless steel are sometimes preferred due to the stringent hygienic and safety requirements. The material is weather resistant, durable and gives good anti-corrosion properties. The stainless steel tank panel is hydraulically deep drawn with a configuration that provides high bending strength and rigidity with minimum deflection when subjected to hydrostatic pressure. The high strength to weight ratio makes it possible to use lighter gauge sheet for fabrication.

The 2 choices available are the bolted and the welded types. The former uses PVC foam gaskets and butyl mastic compounds for water tightness whereas in the latter, the panels and accessories are tungsten inert gas (TIG) welded on site.



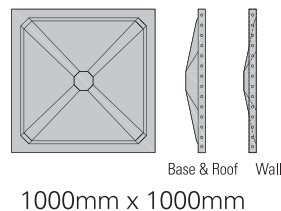
Specification

Material	SS304, SS316, SS444
Panel Dimension	1000 x 1000, 500 x 1000, 500 x 500
Panel Thickness	1.0mm, 1.5mm, 2.0mm, 2.5mm
Panel Flange	90° on all 4 sides
Type	Bolted or Welded

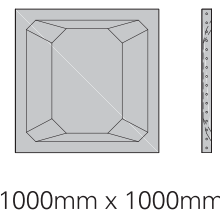
Advantages

Corrosion Free	✓
Durable and Reliable	✓
Lighter in Weight	✓
Easy Installation	✓
Maintenance Free	✓
Hygienic and Safe	✓
Economical Transportation	✓
Weather Resistance	✓
Aesthetically Pleasant	✓

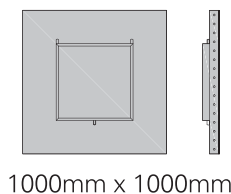
Full Size Tank Panel
(Base, Wall & Roof)



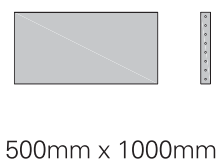
Full Size Nozzle Panel



Manhole Access



Half Size Panel
(Base, Wall, & Roof)



Process



Deep Drawing 1



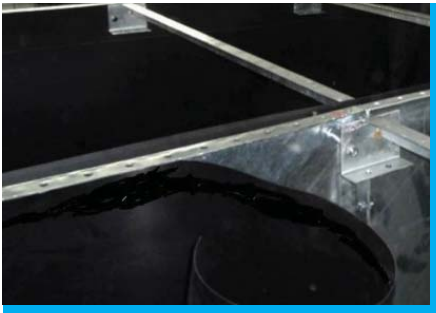
Notching 2



Bending 3

HDPE Lining

High density polyethylene (HDPE) is an ideal material for lining a pressed steel sectional tank. The material is non-toxic, flexible, durable and economical to use. On site, pre-cut HDPE sheets (usually 2.0mm thick) are laid against the internal surfaces of the tank base and the side walls. The joints are then welded by hot wedge or extrusion process.



Often, stainless steel internal accessories are recommended for areas in contact with stored water when a galvanized tank is to be lined. There will be no bi-metallic corrosion happening. The advantages will be getting a tank with clean water storage and possessing long life span.

Packing and Shipment



Installation in Progress



C O M P L E T E D

P
R
O
J
E
C
T
S



Office & Factory

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